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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,053	07/31/2003	Vivek Kashyap	AUS920030078US1	3491
35525	7590	11/17/2006	EXAMINER	
IBM CORP (YA) C/O YEE & ASSOCIATES PC P.O. BOX 802333 DALLAS, TX 75380			MITCHELL, KEITH OLINGA	
			ART UNIT	PAPER NUMBER
			2153	

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/631,053	Applicant(s) KASHYAP ET AL.	
	Examiner Keith O. Mitchell	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. No information disclosure statement was filed with the application.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 22 and 23 are directed to non-statutory subject matter. These claims refer to a computer readable medium which have been defined in the specification (see p.16, lines 15-20) to include transmission type media which are signals. Signals are regarded as non-statutory subject matter per se. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 8, 18 and 23 are rejected under 35 U.S.C 102 (b) as being unpatentable over US Publication No. 20020097728 to Hinderks et al. hereafter referred to as Hinderks.

With respect to claim 8, Hinderks discloses a method for managing multicast groups in a system area network, the method comprising: receiving a leave request from a second node for leaving a multicast group (para. 10 which details that hosts may also send leave requests), wherein the multicast group has a first member at a first node connected to a first switch (see fig. 1); determining whether a single node remains in the multicast group (see para. 10 which details that the router knows how many nodes are joined to each group address and knows when the last node issues its leave request); and if a single node remains in the multicast group, routing the first switch to discard all packets for the multicast group (see para. 10, where the router knows how many nodes remain connected. See para. 9 where the router does not forward packets when no host requests multicast packets.)

With respect to claim 18, Hinderks discloses an apparatus for managing multicast groups in a system area network, the apparatus comprising: receipt means for receiving a leave request from a second node for leaving a multicast group (see para. 10 as specified in claim 8), wherein the multicast group has a first member at a first node connected to a first switch (see fig. 1); determination means for determining whether a single node remains in the multicast group; and routing means for routing the first switch to discard all packets for the multicast group if a single node remains in the multicast group (see para. 9-10 as detailed in claim 8).

With respect to claim 23, Hinderks discloses a computer program product, in a computer readable medium, for managing multicast groups in a system area network, the computer program product comprising:

instructions for receiving a leave request from a second node for leaving a multicast group (see para. 10 as detailed in claim 8), wherein the multicast group has a first member at a first node connected to a first switch (see fig. 1); instructions for determining whether a single node remains in the multicast group (see para. 10 as detailed in claim 8);

and instructions for routing the first switch to discard all packets for the multicast group if a single node remains in the multicast group (see para. 9-10 as detailed in claim 8).

6. Claims 8, 10-13, 18-20 and 23 are also rejected under 35 U.S.C 102 (b) as being unpatentable over US Patent No. 6,331, 983 to Haggerty et al. hereafter referred to as Haggerty.

With respect to claim 8, Haggerty discloses a method for managing multicast groups in a system area network, the method comprising: receiving a leave request from a second node for leaving a multicast group (see col. 11, lines 57-58 which detail that hosts may leave groups at any time), wherein the multicast group has a first member at a first node connected to a first switch; determining whether a single node remains in the multicast group (see fig. 12-250 where it is detected that no more hosts are receiving from a particular multicast group); and if a single node remains in the multicast group, routing the first switch to discard all packets for the multicast group (see fig. 12 and col. 29, lines 54-60 where the group connection is removed from a table. This inherently means that packets are discarded).

With respect to claim 18, Haggerty discloses an apparatus for managing multicast groups in a system area network, the apparatus comprising: receipt means for receiving a leave request from a second node for leaving a multicast group (see col. 11, lines 57-58 as specified in claim 8), wherein the multicast group has a first member at a first node connected to a first switch (see fig. 1); determination means for determining whether a single node remains in the multicast group; and routing means for routing the first switch to discard all packets for the multicast group if a single node remains in the multicast group (see fig. 12-250 and col. 29, lines 39-42 which detect that no local receivers remain for the multicast group and col.29, lines 54-60 where the group connection is removed, which inherently means that the packets are discarded).

With respect to claim 23, Haggerty discloses a computer program product, in a computer readable medium, for managing multicast groups in a system area network, the computer program product comprising:

instructions for receiving a leave request from a second node for leaving a multicast group (see col. 11, lines 57-58 as specified in claim 8), wherein the multicast group has a first member at a first node connected to a first switch (see fig. 1); instructions for determining whether a single node remains in the multicast group (see fig. 12-250;

and instructions for routing the first switch to discard all packets for the multicast group if a single node remains in the multicast group (see fig. 12 and col. 29, lines 54-60 as detailed in claim 8).

With respect to claim 10, Haggerty discloses the methods of claim 8 wherein the step of routing the first switch includes inserting an entry for the multicast group in a multicast routing data structure in the first switch. Haggerty adds receive ports to connection(s) in fig. 10-232.

With respect to claim 11, Haggerty discloses the method of claim 8, wherein the multicast routing data structure is indexed by a multicast identifier. In Haggerty, it is inherent that the table directory (see col. 9, lines 53-59) is arranged in some type of order, which amounts to an index as described.

With respect to claim 12, Haggerty as discloses the method of claim 10, wherein the entry for the multicast group includes an indication that packets are to be discarded. See fig. 7A-203 and col. 26, line 30 to Haggerty where certain packets are discarded.

With respect to claim 13, Haggerty discloses the method of claim 8, further comprising: responsive to a join request from a receiving node, updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving node. See fig. 10-232 and col. 28, lines 50-53 to Haggerty where the connection table is updated.

With respect to claim 19, Haggerty as modified in claim 1 discloses the apparatus of claim 18, wherein the creation means includes means for assigning a multicast identifier to the multicast group. See 7A-202 to Haggerty as described in claim 2.

With respect to claim 20, Haggerty discloses the apparatus of claim 18, wherein the routing means includes means for inserting an entry for the multicast group in a multicast routing data structure in the first switch. See fig. 10-232 to Haggerty as detailed in claim 3.

With respect to claim 21, Haggerty as modified in claim 1 discloses the apparatus of claim 18, further comprising: means, responsive to a join request from a receiving node, for updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving node. . See fig. 10-232 and col. 28, lines 50-53 to Haggerty where the connection table is updated.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 9, 14-17 and 21-22 are rejected under 35 U.S.C 103 (a) as being unpatentable over Haggerty in view of US Patent No. 6507586 to Satran et al. hereafter referred to as Satran.



With respect to claim 1, Haggerty teaches a method for managing multicast groups in a system area network, the method comprising: receiving a join request from a node for joining a multicast group (see col. 8, lines 57-59, where a host wishes to join a designated group address), wherein the node is connected to a first switch (see fig. 1 which illustrates the connection of a host to a router); determining whether the multicast group exists; and if the multicast group does not exist (col. 8, lines 62-67, where the switch determines if a group exists), creating the multicast group and routing the first switch to discard all packets for the multicast group (see col. 9, lines 1-5 which maintains group request in memory. Also fig. 7A-203 and col. 26, line 30, which details that packets are discarded if no local receivers exist).

Haggerty does not teach that join request is a send-without-receive request. However, Sartan, in an analogous art, teaches that a join request can be a send-without-receive request. Sartan teaches the use of one-way multicasting col. 2, lines 24-31, which is interpreted to be the same as sending-without-receiving.

It would have been obvious to one of ordinary skill in the art to enable Haggerty to use one-way multicasting as described in Sartan.

The motivation for doing so would be to provide Haggerty with a method of transmitting data to clients without reserving a channel for receiving acknowledgments which in effect avoids the extended use of a channel and/or the waste of bandwidth. (see col. 1, lines 15-17, col. 2, lines 11-16 to Sartan).

With respect to claim 2, Haggerty as modified in claim 1, discloses that the step of creating the multicast group includes assigning a multicast identifier to the multicast group. See fig. 7A-202 to Haggerty where a new connection is created in the connection table.

With respect to claim 3, Haggerty as modified in claim 1 discloses the method of claim 1 wherein the step of routing the first switch includes inserting an entry for the multicast group in a multicast routing data structure in the first switch. Haggerty adds receive port to connection(s) in fig. 10-232.

With respect to claim 4, Haggerty as modified in claim 1 discloses the method of claim 3, wherein the multicast routing data structure is indexed by a multicast identifier. In Haggerty, it is inherent that the table directory (see col. 9, lines 53-59) is arranged in some type of order, which amounts to an index as described.

With respect to claim 5, Haggerty as modified discloses the method of claim 3, wherein the entry for the multicast group includes an indication that packets are to be discarded. See fig. 7A-203 and col. 26, line 30 to Haggerty where certain packets are discarded.

With respect to claim 6, Haggerty as modified in claim 1 discloses the method of claim 1, further comprising: responsive to a join request from a receiving node, updating at least one

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multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving node. See fig. 10-232 and col. 28, lines 50-53 to Haggerty where the connection table is updated.

With respect to claim 7, Haggerty as modified in claim 1 discloses the method of claim 6, further comprising:

receiving a leave request from a second node for leaving the multicast group; (receiving a leave request is inherent when a node desires to leave the multicast group, see col. 9, lines 57-58)

determining whether a single-node remains in the multicast group; and if a single node remains in the multicast group, routing a switch closest to the single node to discard all packets for the multicast group. See fig. 12-250 to Haggerty, which details that the number of hosts requesting a multicast is monitored. Haggerty proceeds to remove the group connection which inherently means that any packets received are discarded.

With respect to claim 9, Haggerty discloses the method of claim 8 but does not teach that the first member may be a send-without-receive member.

Sartan teaches the use of one-way transmitters in a multicasting application (see col. 2, lines 24-31). These one-way transmitters are taken to be the equivalent of a send-without-receive member.

It would have been obvious to one of ordinary skill in the art to enable Haggerty to use one-way multicasting as described in Sartan.

The motivation for doing so would be to provide Haggerty with a method of transmitting data to clients without reserving a channel for receiving acknowledgments which in effect avoids the extended use of a channel and/or the waste of bandwidth. (see col. 1, lines 15-17, col. 2, lines 11-16 to Sartan).

With respect to claim 14, Haggerty as modified in claim 1 discloses an apparatus for managing multicast groups in a system area network, the apparatus comprising:

receipt means for receiving a join request from a node for joining a multicast group, wherein the node is connected to a first switch (see col. 9, lines 57-59 to Haggerty as in claim 1) and wherein the join request is a send-without-receive request; (see col. 2, lines 24-31 to Sartan as described in claim 1)

determination means for determining whether the multicast group exists; creation means for creating the multicast group; and routing means for routing the first switch to discard all packets for the multicast group if the multicast group does not exist. (see fig. 7A-203 to Haggerty as described in claim 1).

With respect to claim 15, Haggerty as modified in claim 1 discloses the apparatus of claims 14, wherein the creation means includes means for assigning a multicast identifier to the multicast group. See 7A-202 to Haggerty as described in claim 2.

With respect to claim 16, Haggerty as modified in claims 1 discloses the apparatus of claim 14, wherein the routing means includes means for inserting an entry for the multicast group in a multicast routing data structure in the first switch. See fig. 10-232 to Haggerty as detailed in claim 3.

With respect to claim 17, Haggerty as modified in claim 1 discloses the apparatus of claim 14 respectively, further comprising: means, responsive to a join request from a receiving node, for updating at least one multicast routing table for at least one switch in the system area network to route packets for the multicast group to the receiving node. . See fig. 10-232 and col. 28, lines 50-53 to Haggerty where the connection table is updated.

With respect to claim 22 as best understood, Haggerty as modified in claim discloses a computer program product, in a computer readable medium, for managing multicast groups in a system area network, the computer program product comprising:

instructions for receiving a join request from a node for joining a multicast group, wherein the node is connected to a first switch (see col. 8, lines 57-58 to Haggerty as in claim 1)

and wherein the join request is a send-without-receive request; (see col. 2, lines 24-31 to Sartan as described in claim 1)

instructions for determining whether the multicast group exists; and instructions for creating the multicast group and routing the first switch to discard all packets for the multicast group if the multicast group does not exist (see fig. 7A-203 to Haggerty as described in claim 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith O. Mitchell whose telephone number is 517-270-1134. The examiner can normally be reached on 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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23-Oct-06

Glenton Burgess  
Supervisory  
Patent Examiner



GLENTON B. BURGESS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
11/9/06